A DEVICE METHOD AND SYSTEM FOR THE APPLICATION OF CONTENT ON TO THE SURFACE OF A BEVERAGE

FILED AND BACKGROUND OF THE INVENTION

The present invention relates to designed surfaces of foodstuffs and beverages and to means for designing the same. Printers adapted to use food colorants as injected inks are know in the art. Moreover, various molding techniques, using jam or edible confuters as the injected inks are in the public domain. Nevertheless, a content application device, system and method, using simple colorant-free edible material is yet not available.

SUMMARY OF THE INVENTION

In accordance with some embodiments of the present invention, there is provided a content application device for applying content onto the surface of a beverage. The device may include a contenting application head adapted to apply content by agitating the surface of the beverage in a pattern correlated to the content. The device may further include a digital controller adapted to receive a content specific signal and to issue control signals to the content application head, such that the content application head is actuated to apply the content onto the surface of the beverage. According to some further embodiments of the present invention, the device according to may include a content application head which is adapted to agitate the surface of the beverage by applying drops of the beverage onto the surface of the beverage or onto the surface of a froth on the beverage.

BRIEF DESCRIPTION OF THE INVENTION

In order to understand the invention and to see how it may be implemented in practice, a preferred embodiment will now be described, by way of non-limiting example only, with reference to the accompanying drawing, in which

Figure 1 schematically illustrated a method of hydraulically printing on top of a froth of a coffee cup according to one embodiment of the present invention;

Figure 2 schematically illustrated a front view of hydraulic printer according to one embodiment of the present invention;

Figure 3 schematically illustrated a top view of hydraulic printer according to one embodiment of the present invention;

Figure 4 schematically illustrated a top view of a designed coffee cup according to one embodiment of the present invention;

Figure 5 schematically illustrated a side view of hydraulic printer head according to another embodiment of the present invention;

Figure 6 schematically illustrated a side view of hydraulic printer head according to another embodiment of the present invention;

Figure 7 schematically illustrated a side view of 'brush type' hydraulic printer head according to another embodiment of the present invention;

Figure 8 schematically illustrated an online hydraulic designing method according to another embodiment of the present invention;

Figure 9 schematically illustrated an online mechanical designing method according to another embodiment of the present invention; and

Figure 10 schematically illustrated an manually mechanical designing means and method according to another embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the invention. However, it will be understood by those skilled in the art that the present invention may be practiced without these specific details. In other instances, well-known methods, procedures, components and circuits have not been described in detail so as not to obscure the present invention.

Unless specifically stated otherwise, as apparent from the following discussions, it is appreciated that throughout the specification discussions utilizing terms such as "processing", "computing", "calculating", "determining", or the like, refer to the action and/or processes of a computer or computing system, or similar electronic computing device, that manipulate and/or transform data represented as physical, such as electronic, quantities within the computing system's registers and/or memories into other data similarly represented as physical quantities within the computing system's memories, registers or other such information storage, transmission or display devices.

Embodiments of the present invention may include apparatuses for performing the operations herein. This apparatus may be specially constructed for the desired purposes, or it may comprise a general purpose computer selectively activated or reconfigured by a computer program stored in the computer. Such a computer program may be stored in a computer readable storage medium, such as, but is not limited to, any type of disk including floppy disks, optical disks, CD-ROMs, magnetic-optical disks, read-only memories (ROMs), random access memories (RAMs) electrically programmable read-only memories (EPROMs), electrically erasable and programmable read only memories (EEPROMs), magnetic or optical cards, or any other type of media suitable for storing electronic instructions, and capable of being coupled to a computer system bus.

The processes and displays presented herein are not inherently related to any particular computer or other apparatus. Various general purpose systems may be used with programs in accordance with the teachings herein, or it may prove convenient to construct a more specialized apparatus to perform the desired method. The desired structure for a variety of these systems will appear from the description below. In addition, embodiments of the

present invention are not described with reference to any particular programming language. It will be appreciated that a variety of programming languages may be used to implement the teachings of the inventions as described herein.

The following description is provided, alongside all chapters of the present invention, so as to enable any person skilled in the art to make use of said invention and sets forth the best modes contemplated by the inventor of carrying out this invention. Various modifications, however, will remain apparent to those skilled in the art, since the generic principles of the present invention have been defined specifically to provide either hydraulic or mechanic printer useful for designing the surface of a first foodstuff or beverages containing a skin portion, a method printing the same and a method for advertising said design.

The term 'piercing' is referring according to the present invention to either penetrating or etching of the skin of a foodstuff or beverages to at least a portion of its thickness; or to such a foodstuff or beverages which is perforated its all thickness.

The term 'foodstuff and beverages' is referring according to the present invention to any edible composition or matrix in a solid, liquid or gel forms, cold or hot, characterized by a certain color and/or a texture; wherein said foodstuff and beverages comprising at least in their portion a surface characterized by a certain color and/or a texture; and further wherein said color and/or a texture of the aforementioned foodstuff and beverages is differ noticeably from the aforementioned color and/or a texture of the surface.

The term 'coffee' and/or 'coffee cup' is referring according to the present invention to any coffee and coffee-like foodstuff and beverages, selected in a non-limiting manner from coffee, milked-coffee, espresso, cappuccino, black-coffee, grained coffee, ice-coffee, filtered coffee, cocoa products, coffee substitutes, products of cocoa substitutes, chocolate products, milk chocolate drink, ice creams or any combination thereof.

The term 'froth' is referring according to the present invention to any foamed milk or cream, milk products, milk-substitutes or any colloidal or emulsified foodstuffs.

The term 'design' is referring according to the present invention to any outlines selected in a non-limiting manner from any two dimensions or three dimensions, monochromatic, gray scaled or colored blueprint-like presentations, figures, ornamentations, decorations, patterns, logos, comics, figurative characters, freehand-like draws, written texts, numbers, time indications or any combination thereof.

A hydraulic printer according to one embodiment of the present invention is provided useful for designing the surface of a first foodstuff or beverages containing a skin portion by a means of a second foodstuff or beverages. This printer comprising *inter alia* the following five ingredients: (a) at least one container containing said first foodstuff or beverages; (b) a movable printing head adapted to be maneuvered in a lateral movement; (c) at least one reservoir tank containing said second foodstuff or beverages in communication with said printing head; (d) a movable tray on which said container is located, adapted to be maneuvered in a longitudinal movement; and (e) a controller (e.g., a computer, a computing unit etc) adapted to control the operation of said printing head and said tray in a predetermined manner; wherein a predetermined measure of said second foodstuff or beverages is enforced throughout said printing head simultaneously to the tray movement, in the manner that said second foodstuff or beverages is piercing said skin of said first foodstuff or beverages hence the designing of the said surface is obtained.

It is acknowledged in this respect that said first foodstuff or beverages may be equal to the said second foodstuff or beverages. Additionally or alternatively, said first foodstuff or beverages may be different in one or more of its ingredients comparing the said second foodstuff or beverages.

More specific and according to yet another embodiment of the preset invention, an hydraulic coffee printer is provided useful for designing the topical surface of coffee cup containing a froth by a means of a second coffee. This hydraulic coffee printer may comprising inter alia the following ingredients: (a) a cup containing said first coffee; (b) a movable printing head adapted to be maneuvered in a lateral movement; (c) a reservoir tank containing said second coffee in communication with said printing head; (d) a movable tray on which said container is located, adapted to be maneuvered in a longitudinal movement; and (e) a controller (e.g., a computer or any processing unit) adapted to control the

operation of said printing head and said tray in a predetermined manner; wherein a predetermined measure of said second coffee is enforced throughout said printing head simultaneously to the tray movement, in the manner that said second coffee is piercing said forth of said first coffee so that the designing of the said forth is obtained.

It is acknowledged in this respect that said first coffee may be equal to the said second coffee. Additionally or alternatively, said first coffee may be different in one or more of its ingredients comparing the said second coffee.

Reference is made now to figure 1, illustrating an offline or online process of making the designed coffee cup according to yet another embodiment of the present invention.

Hence, it is in the scope of the present invention to provide a cost effective method for designing the surface of a first foodstuff or beverages containing a skin portion by a means of a second foodstuff or beverages by means of the hydraulic printer as defined in any of the above. Said method comprising the step of enforcing a predetermined measure of said second foodstuff or beverages throughout the printing head simultaneously to the tray movement, in the manner that said second foodstuff or beverages is piercing said skin of said first foodstuff or beverages hence the designing of the said surface is obtained.

More specifically, it is also in the scope of the present invention to provide a novel method for designing the surface of a first coffee containing froth by a means of a second coffee by means of the hydraulic printer as defined in any of the above. Said method comprising the step of enforcing a predetermined measure of said second coffee throughout the printing head simultaneously to the tray movement, in the manner that said second coffee is piercing said froth hence the designing of the said surface is obtained.

Reference is made now to figure 2, illustrating a front view of the devise as defined in any of the above, adapted for making the designed coffee cup according to yet another embodiment of the present invention. A top view of the same is drawn schematically in Figure 3.

It is another object of the present invention to provide a foodstuff or beverages which are pierced in at least a portion of said surface; the color or texture of said foodstuff or beverages is different in a noticeable measure from the portion of the surface that was not pierced in the manner that said piercing is characterized as a design provided said surface. An illustrating scheme is provided in reference 4, showing a top view of the designed coffee cup.

Reference is made now to figure 5, presenting a hydraulic printer according to one embodiment of the present invention, having high voltage plates adapted to deflect drops on top of the surface of a coffee cup to be design.

Moreover, figure 6 is presenting an illustration of a printing head of a hydraulic printer according to yet another embodiment of the preset invention. Differently, figure 7 is presenting an illustration of a printing brush of a hydraulic printer according to yet another embodiment of the preset invention.

It is in the scope of the present invention to provide for foodstuff or beverages having a designed surface, provided by means of a hydraulic printer (brash model or injected system) as defined in any of the above. More specifically, is also in the scope of the present invention to provide for coffee which its froth pierced in at least a portion of said topical surface; the color or texture of said coffee is different in a noticeable measure from the portion of the froth that was not pierced in the manner that said piercing is characterized as a design provided said froth. This coffee having a designed froth may be hence provided by means of a hydraulic printer and/or by the hydraulic printing method as defined in any of the above.

It is in the scope of the present invention to provide the hydraulic printer as defined in any of the above, wherein the second foodstuff or beverages is enforced throughout the printing head by pressure or gravity means, and further wherein said second foodstuff or beverages is directed to flow between at least two piezoelectric plates adapted to direct its flow towards the surface of the first foodstuff or beverages in a controlled manner so the predetermined design of the said surface is obtained.

It is also in the scope of the present invention to provide an assembly for online screening of a predetermined designed on the surface of food and beverages in any remote location. This assembly comprising *inter alia* (a) a processing means adapted to design the said design; (b) the hydraulic printer as defined in any of the claims 1 and 2 or in any of its dependent claims; (c) said remote food and beverages having a surface to be designed; wherein said processing means are designing the said design and further sending it description by any inline communication means to the said the printer so as the said predetermined design of said food and beverages is provided.

It is another object of the preset invention to provide a mechanical printer for designing the surface of a foodstuff or beverages containing a skin portion by a means of a plurality of printing pins. This printer comprising inter alia the following ingredients: (a) a container containing said foodstuff or beverages; (b) a movable printing head adapted to be maneuvered specifically determined printing pins from a given array of such pins; (c) a movable tray on which said container is located, adapted to be maneuvered in a longitudinal movement; (d) a controller adapted to control the operation of said printing head and said tray in a predetermined manner; wherein said plurality of pins are enforced throughout said printing head simultaneously to the tray movement, in the manner they are piercing said skin of said first foodstuff or beverages hence the designing of the said surface is obtained.

It is also in a specific scope of the present invention to provide mechanical printer useful for designing the surface a coffee cup containing a froth by a means of a plurality of printing pins. This coffee printer comprising inter alia (a) a cup containing said coffee; (b) a movable printing head adapted to be maneuvered specifically determined printing pins from a given array of such pins; (c) a movable tray on which said container is located, adapted to be maneuvered in a longitudinal movement; (d) a controller adapted to control the operation of said printing head and said tray in a predetermined manner; wherein said plurality of pins are enforced by said printing head simultaneously to the tray movement, in the manner they are piercing said froth on top of said coffee cup hence the designing of the said froth is obtained.

It is also in the scope of the present invention to provide a method for designing the surface of a foodstuff or beverages containing a skin portion by a means of the plurality of printing pins as defined above; said method comprising the step of enforcing said printing pins by means of the printing head simultaneously to the tray movement, in the manner that said printing pins are piercing said skin of said foodstuff or beverages hence the designing of the said surface is obtained.

More specifically, it is in the scope of the present invention to provide a method for designing the froth of a coffee cup by a means of the plurality of printing pins as defined above; said method comprising the step of enforcing said printing pins by means of the printing head simultaneously to the tray movement, in the manner that said printing pins are piercing said froth of said coffee cup hence the designing of the said froth is obtained.

It is still in the scope of the present invention to provide the foodstuff or beverages having a designed surface, provided by means of the mechanical printer and the method as defined in any of the above. More specifically, it is in the scope of the present invention to provide a coffee cup having a designed froth, provided by the mechanical printing machine and method as defined above.

Reference is made now to figures 8 and 9, presenting schematic illustrations for a method of printing the design online in the hydraulic assembly (Fig. 8) and the mechanical assembly (Fig. 9).

Reference is made now to figure 10, showing a photo of a coffee cup comprising a designed froth, made by a means of a novel manually operated mold comprising a plurality of printing pins arranged in a "HI" shape (low array) or time indication "15:10" shape (higher array).

Lastly, it is another object of the present invention to provide a method of doing business, especially by presenting an efficient and cost effective method for advertising advertisements of the surface of foodstuffs and beverages comprising the step of either online or offline designing an advertisement by means of either hydraulic or mechanical printing it mechanically or pneumatically on the surface of foodstuffs and beverages.